13 PUBLIC HEALTH AND SAFETY

This chapter contains a discussion of the public health and safety issues associated with the elements of the proposed mine expansion project. The analysis of potential impacts on public health and safety pertains to mosquitoes and reclamation features associated with the proposed mine expansion project. In addition, mitigation measures are provided to reduce significant and potentially significant impacts. Hazardous materials at the Patterson mine site are evaluated separately in Chapter 14, Hazardous Materials.

13.1 EXISTING CONDITIONS

According to the California Department of Health Services, Technical Committee for the Development of Vector Prevention Standards (California Department of Health Services 1986), a vector is "any insect or other animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury including, but not limited to, mosquitoes, flies, other insects, ticks, mites, and rodents." *Vector Prevention in Proposed Developments: Guidelines, Standards and Checklists* (California Department of Health Services 1986) directs environmental documents to examine two principal types of vector impacts: (1) the potential for creation of a favorable condition or habitat for vectors (as with a water project that may support mosquitoes and mosquito reproduction), and (2) effects of an existing vector population or the potential for disease on a proposed project. The proposed mine expansion project could potentially result in the first category of impact.

REGIONAL THREATS OF VECTOR-BORNE DISEASE

Encephalitis and other vector-borne diseases can be transmitted by mosquitoes. Encephalitis is an inflammation of the brain that can be caused by bacterial or viral infection. There are no vaccines or specific treatments for human cases of encephalitis. Mosquitoes carrying western equine encephalitis (WEE) were discovered in 1993 in the City of Roseville and unincorporated areas to the west. In 1996 they were found 1 mile south of the Placer County line at Gibson Ranch in Sacramento County. (Placer County 2004.) An epidemic of arthropod-borne encephalitis occurred in California in 1950–1959. The majority of the illness occurred in the Central Valley.

Another important vector-borne disease is the West Nile virus. The virus was first identified in the United States in fall 1999 and had spread to 46 states, including California, by the end of 2003 (California Department of Health Services 2004). The West Nile virus has been detected in 57 of the 58 counties in California, including Placer County (California Department of Health Services 2004). Mosquito control districts statewide place sentinel chicken flocks throughout their service areas and take chicken blood samples for early detection of virus transmission (SYMVCD 2003). One of the five flocks placed by the Placer Mosquito Abatement District (MAD) is located in the Sheridan area; flock placement is predicated on historical virus occurrence and the best professional judgment of Placer MAD vector ecologist Jamesina Scott, Ph.D. (Dill, pers. comm., 2004).

No epidemics of WEE or other diseases such as St. Louis encephalitis have occurred in the Sacramento or San Joaquin valleys for several years; however, there is concern that with the recent large population

increase in the region, another epidemic could occur. As mentioned above, West Nile virus is regarded is a particular threat. The vector species for the diseases occurring in California, including West Nile virus, can be found anywhere in the Placer MAD service area and are quite numerous. As the human population increases, the risk of infection goes up because of the increased exposure of humans to the vectors. (Dill, pers. comm., 2004.)

EXISTING MINING OPERATIONS

As described in Chapter 2, Project Description, mining has occurred on the Patterson mine site and in surrounding areas since shallow placer mining occurred in the region in the 1800s. More recently, sand and gravel deposits have been mined continuously at the Patterson mine site since approximately 1956 (Placer County 1987). The existing operation was permitted in 1987 to mine and process approximately 21 million tons of sand and gravel deposits.

The existing operation is permitted by Placer County to operate on a site of approximately 326 acres. The permitted processing area, supporting maintenance shop, scale house, and offices are located south of the Bear River while the majority of the current mining operations occurs on the north side of the river. Sand and gravel deposits are mined using a sequential excavation to an approximate depth of 30–40 feet (maximum depth of 60 feet). Side slopes created during mining operations are reclaimed to 2:1 or flatter. Mining and processing is currently conducted at the mine 6 days per week, year round. Current shipping and business hours are Monday through Friday, 6 a.m.–5 p.m., and Saturdays, 6 a.m.–noon; mining and processing take place Monday through Saturday, 6 a.m.–10:30 p.m. (5 a.m.–midnight in summer). Hours of operation are extended periodically in response to specific contractual requirements of certain projects.

Stagnant water, typically found in creeks, ditches, retention basins, temporary rainwater ponds, and other water bodies, can be used as breeding areas for large populations of mosquitoes. Sources of standing water currently found on the Patterson mine site include open pit areas, settling ponds, and a reclaimed pond in a previously mined portion of the site. For many years the Sutter-Yuba Mosquito and Vector Control District (SYMVCD) has conducted periodic inspections of the mine site for mosquitoes and implemented abatement measures such as the use of mosquito fish to control mosquito populations, as needed (Abshier, pers. comms., 2001 and 2004).

AGRICULTURAL USES

Agricultural operations are present both on the Patterson mine site and on adjacent parcels. Existing agricultural uses in the project vicinity include walnut orchards located within the Patterson mine site and offsite to the north and west, and rice fields situated offsite to the south. In addition, portions of the Patterson mine site not disturbed by mining operations, along with adjacent areas to the southeast of the site, support periodic livestock grazing.

13.2 REGULATORY BACKGROUND

Pursuant to Division 3, Chapter 5, §2270(f) of the California Health and Safety Code, all mosquito control districts have the authority to enter onto any property without hindrance or notice for any of the following reasons: (1) to inspect for the presence of mosquitoes or other vectors, or their breeding habitat; (2) to abate their breeding habitat; (3) to inspect to determine whether a notice has been complied with to abate vectors; and (4) to implement appropriate physical, chemical, or biological control measures for a property.

Until recently, the SYMVCD was the sole entity with authority to conduct mosquito and vector control activities at the Patterson mine site. For some 15 years the district has conducted inspections at the mine site and in the adjacent rice fields, finding that onsite ponds have been generally weed free and therefore often mosquito free (Abshier, pers. comm., 2004). However, mosquito control activities are also now conducted in the vicinity of the mine site by Placer MAD (Dill, pers. comm., 2004). Although Placer MAD was formed in 1996 by the Placer County Board of Supervisors, the district was not able to obtain funding (except in the City of Lincoln) until 2000, when a ballot measure was passed districtwide. The Placer MAD service area, which originally included Lincoln, Rocklin, Roseville, Loomis, and the unincorporated areas west of Auburn, has expanded to cover Sheridan (Placer MAD 2004; Dill, pers. comm., 2004).

Under the proposed project, Placer MAD would be expected to conduct mosquito control inspections and any other necessary activities in the portion of the Patterson mine site located in Placer County, while the SYMVCD would complete such activities in the Yuba County portion of the site (Abshier, pers. comm., 2004).

The regulatory background for mine reclamation is discussed in Section 4.2 in Chapter 4, Land Use/Agriculture.

13.3 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to public health and safety if it would:

- create a health or potential health hazard; or
- expose people to existing sources of potential health hazards.

PROJECT IMPACTS

Impact 13-1

Potential for Accidents and Injury Caused by Reclamation Features. *Reclaimed slopes (2.25:1 or flatter) and pond areas revegetated in accordance with the proposed mine reclamation plan may present attractive nuisances that could result in accidents and injury to unauthorized persons. However, future public exposure at the Patterson mine site is*

expected to be limited because of ongoing agricultural operations and existing site fencing. In addition, the applicant has proposed to modify the mine reclamation plan to create pond areas for private uses and wildlife habitat instead of a "for public" fishing lake, per the currently approved mine reclamation plan, to further preclude public access to the Patterson mine site. Therefore, this impact is considered ***less than significant****.*

Mining of the proposed expansion area and the proposed revisions to the existing mine reclamation plan would create side slopes and pond areas that could pose potential long-term public safety hazards. Mined areas would be reclaimed to pond areas with wetland habitat, walnut orchards, an elderberry mitigation area, and riparian and oak woodland habitats. Reclaimed mine side slopes would be 2.25:1 or flatter in accordance with the mine reclamation plan, and would be revegetated with grasses and riparian and oak woodland plant species to maintain the relative integrity of the created side slopes (Carlton Engineering, Inc., 2003). Specific impacts related to slope stability are evaluated in Chapter 10, Geology, Minerals, and Soils.

The applicant has proposed to modify the existing mine reclamation plan to create pond areas for private uses and wildlife habitat in the southeastern portion of the Patterson mine site instead of a public fishing lake per the currently permitted mine reclamation plan (Western Planning and Engineering 1986). Created ponds could present an attractive nuisance that could result in accidents (including the potential for injury) after final reclamation has been completed. These accidents could occur when unauthorized trespassers inadvertently slip into ponds and drown. However, future public exposure at the Patterson mine site is expected to be limited because of the ongoing presence of commercial agricultural operations (primarily walnut orchards) both onsite and to the immediate north, south, and west, and because of existing site fencing. Security measures in the existing agricultural areas consist of periodic security patrols, nighttime maintenance activities, and harvesting operations, all of which put staff members in these areas during the nighttime hours. In addition, the use of pond areas in the southeastern portion of the Patterson mine site for private uses and wildlife habitat instead of for public recreation uses per the currently approved mine reclamation plan (Western Planning and Engineering 1986) would further preclude any potential for accidental entry. This impact is therefore considered less than significant.

Impact **13-2**

Mosquito Hazards. *The proposed project would include mine pits, reclaimed lakes, and reclaimed rice fields that could provide suitable breeding habitat for mosquitoes. Under the proposed project, the SYMVCD and Placer MAD would conduct mosquito abatement activities within the project site. These activities are expected to effectively control mosquito populations. Therefore, this impact is considered* ***less than significant.***

The proposed project would include excavation of mine pits during the mining phases. Approximately 320 acres of lakes and wetlands would be subsequently developed, including a new 300-acre privately owned off-channel lake as well as approximately 5 acres of newly created emergent marsh/riparian wetland in Phase 6 and preservation of the existing 15-acre reclaimed pond in the eastern corner of the site. In addition, approximately 36 acres located in Phase 6 would be reclaimed as rice fields. Shallow, stagnant water bodies such as shallow lakes, ponds, and rice fields can provide suitable breeding habitat for mosquitoes that, in large numbers, are considered a public nuisance and could transport encephalitis, the West Nile virus and other vector-borne diseases to humans. Under the proposed project, the

SYMVCD and Placer MAD would conduct mosquito abatement activities within the project site as necessary. The ongoing mosquito abatement activities are expected to effectively control mosquito populations during mining activities and following mine reclamation. Therefore, this impact is considered less than significant.

13.4 MITIGATION MEASURES

No mitigation measures are necessary for the following *less-than-significant* impacts.

13-1: Potential for Accidents and Injury Caused by Reclamation Features
13-2: Mosquito Hazards

13.5 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No significant impacts related to public health and safety would result from implementation of the proposed project.